

I. Amendments to the Claims

This listing of claims replaces without prejudice all prior versions and listings of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended) A water treatment ultraviolet radiation sensor device for detecting ultraviolet radiation from a plurality of submerged ultraviolet radiation sources disposed in a predefined arc around the sensor device in a radiation field, the device comprising:

a radiation collector configured to (i) receive ultraviolet radiation from the plurality of submerged ultraviolet radiation sources disposed in the predefined arc around the sensor device within the radiation field, and (ii) redirect the received radiation along a predefined pathway, said radiation collector having a polygonal cross-section; and

a sensor element configured to detect and respond to incident radiation along the pathway.

Claim 2 (Previously Presented) The sensor device defined in claim 1, wherein the predefined arc comprises a substantially 360° arc.

Claim 3 (Previously Presented) The sensor device defined in claim 1, wherein the predefined arc comprises at least one arc less than 360°.

Claim 4 (Previously Presented) The sensor device defined in claim 1, wherein the predefined arc comprises two or more independent arcs less than 360°.

Claim 5 (Previously Presented) The sensor device defined in claim 1, wherein the radiation collector comprises a distal surface having a generally concave shape and further comprises a reflective surface to reflect the incident radiation along the pathway.

Claim 6 (Previously Presented) The sensor device defined in claim 1, wherein the radiation collector comprises a distal surface having a generally convex shape which refracts and reflects the incident radiation along the pathway.

Claim 7 (Previously Presented) The sensor device defined in claim 1, wherein the radiation collector is directly mounted to the sensor element.

Claim 8 (Currently Amended) The sensor device defined in claim 1, wherein the radiation collector is remote from the ~~radiation~~ sensor element.

Claim 9 (Cancelled)

Claim 10 (Previously Presented) The sensor device defined in claim 1, wherein the radiation collector has a generally circular cross-section.

Claim 11 (Currently Amended) A water treatment ultraviolet radiation source module comprising:
a frame having a first support member and configured to be disposed in water;
at least one radiation source assembly extending from and in engagement with said first support member, the at least one radiation source assembly comprising (i) at least one ultraviolet radiation source, and (ii) a radiation sensor device comprising:

a radiation collector configured to receive ultraviolet radiation from a plurality of ultraviolet radiation sources disposed in the water in a predefined arc around the collector, and to redirect the received ultraviolet radiation along a predefined pathway; and

 a sensor element configured to detect and respond to the incident ultraviolet radiation redirected along the pathway.

Claim 12 (Original) The radiation source module defined in claim 11, wherein the predefined arc comprises a substantially 360° arc.

Claim 13 (Original) The radiation source module defined in claim 11, wherein the predefined arc comprises at least one arc less than 360°.

Claim 14 (Original) The radiation source module defined in claim 11, wherein the predefined arc comprises two or more independent arcs less than 360°.

Claim 15 (Previously Presented) The radiation source module defined in claim 11, wherein said at least one

ultraviolet radiation source is disposed within a protective sleeve.

Claim 16 (Previously Presented) The radiation source module defined in claim 11, wherein the radiation collector comprises a distal surface having a generally concave shape and further comprises a reflective surface to reflect the incident radiation along the pathway.

Claim 17 (Previously Presented) The radiation source module defined in claim 11, wherein the radiation collector comprises a distal surface having a generally convex shape which refracts and reflects the incident radiation along the pathway.

Claim 18 (Previously Presented) The radiation source module defined in claim 11, wherein the radiation collector is directly mounted to the sensor element.

Claim 19 (Currently Amended) The radiation source module defined in claim 11, wherein the radiation collector is remote from the ~~radiation~~ sensor element.

Claim 20 (Previously Presented) The radiation source module defined in claim 11, wherein the radiation collector has a polygonal cross-section.

Claim 21 (Previously Presented) The radiation source module defined in claim 11, wherein the radiation collector has a generally circular cross-section.

22. (Currently Amended) A water treatment ultraviolet radiation source assembly comprising:

a protective sleeve configured to be disposed in the water to be treated, said protective sleeve containing:

(i) at least one ultraviolet radiation source configured to treat the water, and

(ii) a radiation sensor device configured to detect ultraviolet radiation in a field in the water to be treated, the sensor device comprising:

a radiation collector configured to (i) receive ultraviolet radiation from a predefined arc around the collector within the field, and (ii) redirect the received ultraviolet radiation along a predefined pathway; and

a sensor element configured to detect and respond to the to incident ultraviolet radiation along the pathway.

Claim 23 (Original) The radiation source assembly defined in claim 22, wherein the predefined arc comprises a substantially 360° arc.

Claim 24 (Original) The radiation source assembly defined in claim 22, wherein the predefined arc comprises at least one arc less than 360°.

Claim 25 (Original) The radiation source assembly defined in claim 22, wherein the predefined arc comprises two or more independent arcs less than 360°.

Claim 26 (Previously Presented) The radiation source assembly defined in claim 22, wherein the radiation collector comprises a distal surface having a generally concave shape and further comprises a reflective surface to reflect the incident radiation along the pathway.

Claim 27 (Previously Presented) The radiation source assembly defined in claim 22, wherein the radiation collector comprises a distal surface having a generally convex shape which refracts and reflects the incident radiation along the pathway.

Claim 28 (Previously Presented) The radiation source assembly defined in claim 22, where the radiation collector is directly mounted to the sensor element.

Claim 29 (Currently Amended) The radiation source assembly defined in claim 22, wherein the radiation collector is remote from the ~~radiation~~ sensor element.

Claim 30 (Previously Presented) The radiation source assembly defined in claim 22, wherein the radiation collector has a polygonal cross-section.

Claim 31 (Previously Presented) The radiation source assembly defined in claim 22, wherein the radiation collector has a generally circular cross-section.

Claim 32 (Currently Amended) An ultraviolet water treatment system comprising:

an array of ultraviolet radiation sources configured to generate a field of ultraviolet radiation in the water to be treated, the array of ultraviolet radiation sources further comprising:

a radiation sensor device configured to detect ultraviolet radiation in the field of ultraviolet radiation in the water to be treated, the sensor device comprising:

 a radiation collector configured to (i) receive ultraviolet radiation from a predefined arc around the collector within the field of ultraviolet radiation in the water to be treated, and (ii) redirect ~~redirecting~~ the received ultraviolet radiation along a predefined pathway; and

 a sensor element configured to detect and respond to the redirected ultraviolet radiation along the pathway.

Claim 33 (Original) The fluid treatment system defined in claim 32, wherein the predefined arc comprises a substantially 360° arc.

Claim 34 (Original) The fluid treatment system defined in claim 32, wherein the predefined arc comprises at least one arc less than 360°.

Claim 35 (Original) The fluid treatment system defined in claim 32, wherein the predefined arc comprises two or more independent arcs less than 360°.

Claim 36 (Previously Presented) The fluid treatment system defined in claim 32, wherein the radiation collector comprises a distal surface having a generally concave shape and further comprises a reflective surface to reflect the incident radiation along the pathway.

Claim 37 (Previously Presented) The fluid treatment system defined in claim 32, wherein the radiation collector comprises a distal surface having a generally convex shape which refracts and reflects the incident radiation along the pathway.

Claim 38 (Previously Presented) The fluid treatment system defined in claim 32, wherein the radiation collector is directly mounted to the sensor element.

Claim 39 (Currently Amended) The fluid treatment system defined in claim 32, wherein the radiation collector is remote from the ~~radiation~~ sensor element.

Claim 40 (Previously Presented) The fluid treatment system defined in claim 32, wherein the radiation collector has a polygonal cross-section.

Claim 41 (Previously Presented) The fluid treatment system defined in claim 32, wherein the radiation collector has a generally circular cross-section.